Job Specific Environmental Awareness Training – Machine Shop Operations

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Course Objective: A significant environmental aspect is associated with Machine Shop operations. This course has been designed to provide you with the job-specific information that you need know to protect the environment and to meet Laboratory and Government regulations for handling the waste streams produced by this operation. The contents of this training have been extracted from the NSLS PRM and BNL Subject Area.

Description of Significant Environmental Aspect: Machine shop operations produce two types of waste that need to be controlled: industrial waste and RCRA[1] hazardous waste. The RCRA hazardous wastes produced by your operations include any chemical waste and lead. Examples include the contents of the ultrasonic cleaner when emptied, lead scrap, mop water containing lead, soldering dross, and non-empty aerosol spray cans. Lead machining also creates hazardous wastes other than the lead itself, such as personal protective equipment (e.g. gloves), machine coverings, oil, and oily rags that become contaminated with lead during the process.

The term "industrial waste" refers to non-RCRA hazardous waste that is banned from disposal into the regular trash by State and Federal regulations. Waste oil and oily rags are the industrial wastes produced by your operation. RCRA hazardous waste and industrial waste are managed in the same manner, except that industrial wastes may be labeled with a green non-hazardous waste label instead of a red hazardous waste label. If the oil or oily rags become contaminated with other chemical products or lead, they become RCRA hazardous waste and must be labeled with a red hazardous waste label.

Training Requirements: Shop managers are required to read this form and to take RCRA Hazardous Waste Generator training. Shop users are required to read this form.

Operational Controls: RCRA hazardous wastes must be containerized, labeled and kept in a Satellite Accumulation Area (SAA) until the job is complete, or the container is full. Then, the container must be brought to the 90-day Storage Area by the RCRA trained shop manager. A non-radioactive waste form shall be filled out that describes the waste. Industrial wastes must be kept in labeled containers provided with secondary containment.

- All lead brick cutting must be done in the Machine Shop in Building 726 or the User Machine Shop in Building 725, using band saws in those shops designated for lead cutting. Exceptions are allowed and shall be covered by a Work Permit. Contact the Shop Manager before starting any lead cutting in one of those shops.
- Oily rags that are not contaminated with lead or soaked with solvents shall be collected in a fireproof container. The contents of the container shall be bagged and identified with a green label, and brought to the 90-day Storage Area for disposal as an industrial waste. A non-radioactive waste form shall be filled out describing the waste.
- With the exception of waste "Blasocut" from the Crystal Cutting machine shop, all other waste "Blasocut" shall be sent to Central Shops for recycling (waste container is by NSLS Stockroom). Waste "Blasocut" from the Crystal Cutting machine shop must be handled as industrial waste and processed through the Waste Management Division.
- Other types of waste oils shall be handled as industrial wastes. Waste oil containers shall be emptied into the designated waste oil drum (located near the west roll-up doors).
- Lead scrap and solder dross shall be collected for recycling. Collect lead separately from other metals.
- Water used for mopping the floor when Lead Work Areas are cleaned may be discarded in slop sinks that drain to BNL sanitary water system. Water used to mop around and under a band saw used for cutting must be collected and analyzed before disposal.

<u>Specific Waste Information</u>**:**

- Use of degreasing products other than "LPS degreaser", "AC-500" and "Zep-Pride E" must be assessed by the Safety Engineer, the Industrial Hygienist or the Environmental Compliance Representative (ECR) to determine whether they contain chemicals that will cause a waste concern.
- Waste from the shop vacuum used to pick-up lead chips and lead dust shall be managed as a hazardous waste when the vacuum is emptied. Only HEPA filtered vacuums should be used for clean-up of lead or other toxic metals. Otherwise, the contents of shop vacuums can be discarded in the trash.

[1] Federal regulations for hazardous waste are contained in the Resource Conservation and Recovery Act (RCRA).

Response to Leaks/Spills: Keep absorbent socks around the base of machines with coolant reservoirs that show evidence of leaking. If a spill of oil or other chemical product occurs, take prompt action to prevent it from discharging to floor drains or sinks. Any discharge to a drain or to the outdoors must be reported to the Lab emergency response number (x2222) and to the NSLS Control Room Operator (x2550) or member of the NSLS ES&H staff. Any indoor spill greater than five gallons shall also be reported as described. You can clean up other spills on your own, if you are familiar with the hazards present and are comfortable doing so.

Your Role and Responsibility: You are responsible for the proper management of your waste and to take prompt action in the event of spills. If you are ever in doubt regarding the proper course of action, contact your supervision or a member of the NSLS ESH Staff for advice.

Potential Regulatory and Environmental Impacts: Mismanagement of waste can result in violations of RCRA hazardous waste regulations. Discharge of oils and other chemicals to drains can result in violations of BNL release limits. Both can ultimately result in contaminated soil or groundwater. BNL is subject to fines and penalties for such violations, and is responsible for the clean-up costs associated with any required remediation. BNL has also suffered poor public perception due to poor waste management practices and contamination events in the past. Proper management of waste and spills will improve our relationship with regulators and the public.

Pollution Prevention and Waste Minimization: Cooperate with NSLS's recycling efforts by collecting scrap metal, glass and plastic that you produce and deposit it in its respective container for recycling. Empty aerosol cans should be deposited into the designated empty aerosol-can recycling container (located by the NSLS Stockroom). Please offer any suggestions and comments to your supervision about pollution prevention and waste minimization in order to help the NSLS reduce disposal costs and achieve waste minimization goals.

Print Name	Sign Name	Life Number	Date

Signature conveys that you have read and understand this information.
LS-ENV-SHOP

This section to be completed by Instructor: _____
(initial here and complete below if applicable)

Was the NSLS Shop User Safety Rules Acknowledgement signed today? (LS-SH-RULES1) ☐ Yes
Was NSLS Shop User Video viewed today? (LS-SH-VID2) ☐ Yes

This information is being requested for data entry purposes only.
Please retain the documentation for the Acknowledgement and Video.
Return this completed form to Training Coordinator.

NSLS Environmental Management Training

Background Environmental and hazardous waste management regulations are among the most sensitive and visible issues in the American society. At BNL, these regulations are indisputably the most sensitive topic within the ESH arena since environmental releases and the perception of poor waste handling practices were at the heart of the AUI discharge by DOE and in the development of the strong management emphasis on these issues. In light of the high visibility and sensitivity to these issues, BNL management committed to the development of an Environmental Management Program that met all the requirements of ISO 14001, an international organization which has adopted standards for many types of programs, including environmental management.

A key issue within ISO 14001 is the identification of all activities at a facility that are associated with significant environmental aspects. All activities involving a significant aspect are to be managed and controlled to ensure that no adverse environmental impact results. As a part of that program, all personnel whose work involves a significant environmental aspect[1] will be provided specific environmental awareness training relating to their duties.

There are several work activities at NSLS that are involved with our facilities' significant environmental aspects. These activities are:

- Regeneration of process water mixed bed deionizing
- Machine shop operations
- Photographic dark room operations
- Vacuum pump maintenance
- Electrical/mechanical assembly
- Experimental Program
- 90 Day/Satellite Area Operation
- Silicon Crystal Etching

For each of these activities, job specific training has been developed to ensure knowledge of applicable requirements that should be followed to properly control the significant environmental aspects.

[1] Significant environmental aspects have been defined at BNL as involving any of the following issues:

- Generation of any amount of industrial, hazardous, radioactive, mixed, or medical wastes
- Air or liquid effluents or emissions exceeding defined values
- Storage or use of chemicals or radioactive material above certain thresholds